



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10**

1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140

April 19, 2012

MEMORANDUM

TO: Tristen Gardner, Inspector
Office of Enforcement and Compliance
Pesticides and Toxics Unit

FROM: Brent Richmond, Credentialed Compliance Sampler
Office of Environmental Assessment
Environmental Services Unit

SUBJECT: Case Narrative for Field Technical Support – Rainier Commons

Project Code: HWD-208A
Account Code: 20122013B10P501E50

Introduction

This memorandum documents sampling conducted by EPA staff at Rainier Commons, 3100 Airport Way South, Seattle WA, on April 13, 2012. Sampling was done by Brent Richmond with support from Jennifer Crawford, Dave Bartus and Tristen Gardner. The sampling was done according to the Generic PCB quality assurance project plan (QAPP) with a TSCA PCB Site-Specific Inspection Plan approved by Don Matheny, QA Chemist.

Sampling Procedure

A total of twenty one samples were collected, one of which was a PCB equipment wipe, nine were water/liquid samples, and 11 were Sediment/Bulk samples. The samples were collected by various methods depending on the density of the sediment or if it was liquid.

The water/liquid samples were collected from totes labeled T-01 to T-07 and one 55 gallon drum with a new/clean composite liquid sampler (COLIWASA). Samples were placed in clean QC class 500 milliliter (ml) glass containers to composite each sample. Each tote contained various levels of sediment and head space. Two to four dips of the COLIWASA were needed to obtain enough liquid. The composites were then poured off into two clean QC class 40 ml vials.

Sediment sampling of totes T-01 to T-07 was done with a plastic bailer with the top end cut off. The totes with enough sediment to stick the bailer into the sediment and extract sample material were done in this fashion. The totes with light sediment were vacuumed using a bailer with a hand vacuum pump attached. In each case, a new bailer was used for each individual tote. The samples were placed directly from the bailer into a clean QC class 500 ml amber jar.

Heavy material in the Clean Harbors red steel "sweepings" totes, serial numbers 10413 and 10416, were either scooped out using a stainless steel scoop on a pole (10413) or with a core sampler (10416). For each a 3x3 grid pattern was used to composite the sample in a stainless steel bowl. Tote 10416 only 6 of the 9 discrete sites were obtained due to trash and the mounding of the sweepings in the tote. Each discrete sample from the grid was placed into a clean stainless steel bowl to composite. After thoroughly mixing the sample was placed into clean QC class jars.

QA/QC for the sampling event included: a field duplicate on T-05 water, a PCB wipe on sediment scoops and cores used for sampling sweepings totes, a field duplicate of the sweepings tote 10413, an MS/MSD for the lab was taken on T-07 liquid sample, and a field duplicate on T-01 for sediment. EPA staff also provided split samples for Rainier Commons environmental representative.

A copy of the chain of custody is included in Attachment 1(pg 3-4). A copy of the quality certification from the sample container manufacturer is included in Attachment 2 (pg 5-9). The samples were placed in a cooler with wet ice and transported under chain of custody to the EPA Region 10 Laboratory on April 13, 2012. Field logbook and original chain of custody forms will be mailed to Tristen Gardner for the case file.

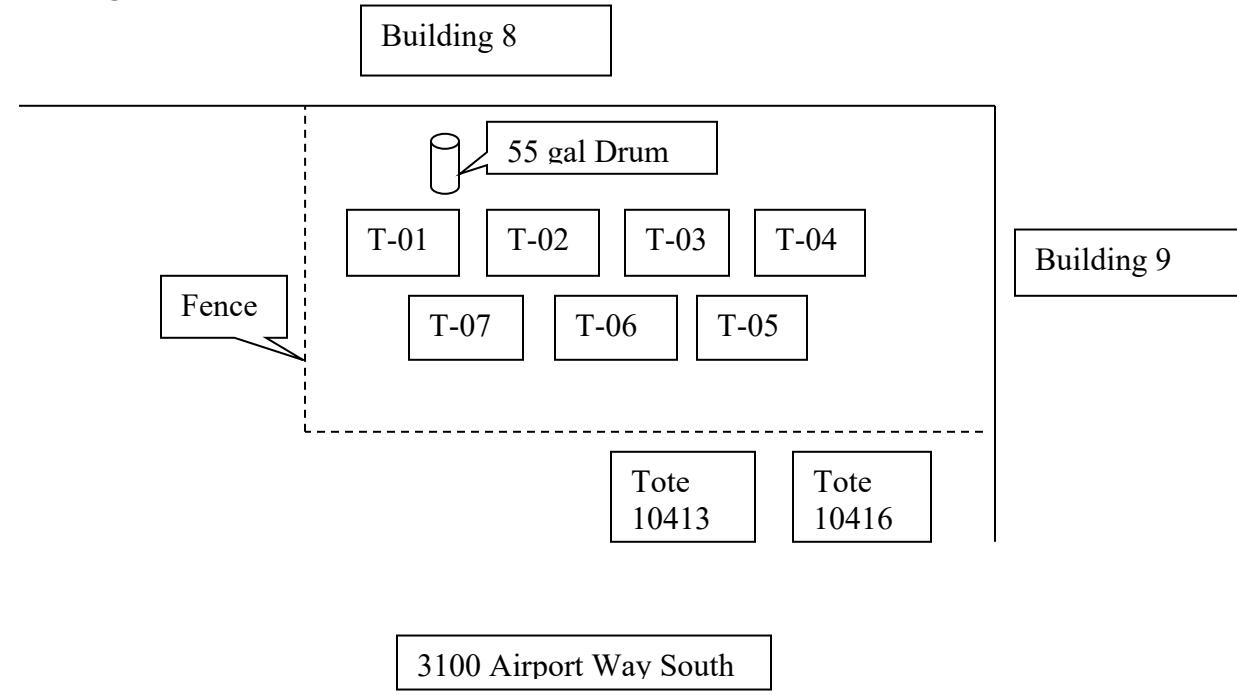
Field Analysis

No field analysis was performed.

Photo Log

No photos by sampler. Inspector took all pictures.

Site Diagram



Attachment 2

QUALITY CERTIFIED™ Certificate of Compliance

The enclosed containers have been chemically cleaned by using the specified USEPA cleaning procedures for low level chemical analysis. Representative containers have been tested by independent certified laboratories for their appropriate use. ESS containers meet and exceed the required detection limits established by the USEPA in SPECIFICATIONS AND GUIDANCE FOR CONTAMINANT-FREE SAMPLE CONTAINERS (OSWER Directive #9240.0-05A).

EXTRACTABLE ORGANIC COMPOUNDS (PROCEDURE 1)									
Analyte	Quantitation Limit (ug/l)	Alpha-Chloroethane	<0.005	4-Methylphenol	<1	2-Nitrophenol	<1	Anthracene	<0.1
PCDD/F's		Gamma-Chloro- Dioxaphane	<0.005	N-Nitroso-di-propylamine	<1	Dimethylphthalate	<1	Di-n-Butylphthalate	<0.2
Alpha-HxC	<0.005	Aroclor-1016	<0.2	Hexachlorobutane	<1	Acenaphthylene	<0.2	Fluoranthene	<0.1
Beta-HxC	<0.005	Aroclor-1221	<0.2	Nitrobenzene	<1	2,4-Dinitrotoluene	<1	Pyrene	<0.15
Delta-HxC	<0.005	Aroclor-1232	<0.2	Isophorone	<1	3-Nitroaniline	<1	Butylbenzylphthalate	<1
Gamma-HxC (Unlabeled)	<0.005	Aroclor-1242	<0.2	2-Nitrophenol	<1	Acenaphthene	<0.2	1,2-Dichlorobenzene	<1
Heptadchlor	<0.005	Aroclor-1248	<0.2	2,6-Dimethylphenol	<1	2,4-Dinitrophenol	<5	1,2'-Dichlorobenzene	<1
Alkalin	<0.005	Aroclor-1254	<0.2	Bis(2-Chlorophenoxy) methane	<1	Dibenzofuran	<1	1,4-Dichlorobenzene	<1
Heptachlor-Epoxyde	<0.005	Aroclor-1260	<0.2	2,4-Dichlorophenol	<1	2,4-Dinitrotoluene	<1	2,3-Dichlorobenzene	<1
Endosulfan I	<0.005	Aroclor-1262	<0.2	Naphthalene	<0.2	Diphenylphthalate	<1	Benzyl Jodophenone	<0.15
Endosulfan II	<0.005	Aroclor-1268	<0.2	Chloroform	<1	4-Chlorophenyl Methylether	<1	Chrysene	<0.1
Dieldrin	<0.005	Aroclor-1288	<0.2	Mixed-hydrocarbons	<1	Phenol	<0.15	Bis(2-Ethylhexyl) Phthalate	<1
4,4'-ODDE	<0.005			4-Chloro-2-Methylphenol	<1	4-Nitrophenol	<1	Di-n-Octylphthalate	<0.2
Endosulfan Sulfate	<0.005			2-Methylphenol	<1	4,6-Dinitro-2-Naphthol	<1	Benzyl Bromophenone	<0.15
4,4'-DDT	<0.005			Isopropylphenol	<1	N-Nitrosodiethylamine	<1	Benzyl Phenol	<0.15
Endosulfan Selfpoly	<0.005			2-Chlorophenol	<1	2,4,6-Trichlorophenol	<1	Indenyl(2,3-dihydro)-	<0.2
Heptachlor	<0.005			2-Methylphenol	<1	4-Aminobenzyl-Phenylether	<1	Chlorodiphenylpropane	<0.15
Eddins Esterate	<0.005			1,2-Dimethylbenzene	<1	Heptachlorobutane	<1	Benzyl(4-Ju)phenole	<0.15
Eddins Aldehyde	<0.005			2,2'-Cyclo-	<1	Pentachlorophenol	<1	Benzocic Acid	<0.5
		[1-Chloropropane]	<1	2-Chlorophenol	<0.15	Phenanthrene	<0.2	Benzyl Alcohol	<1

PURGEABLE VOLATILE ORGANIC COMPOUNDS (PROCEDURE 2)									
Analyte	Quantitation Limit (ug/l)	Chloroform	<0.5	1,1-Dichloroethene	<0.5	4-Hexynylbenzene	<0.5	Trichloro Fluorophenone	<0.5
Acetone	<0.5	Chloroform	<0.5	1,2-Dichloroethene	<0.5	Methyl vinyl Chloride	<2	1,2,3-Trichloropropane	<0.5
Barbituric	<0.5	Chloroform	<0.5	1,1-Dichloroethane	<0.5	Naphthalene	<0.5	1,2,3-Trichlorobutane	<0.5
Bromofluoromethane	<0.5	Chloroform	<0.5	2-Chloroethane	<0.5	Phenolbenzene	<0.5	1,2,3-Trichlorobutene	<0.5
Bromoform	<0.5	Chloroform	<0.5	2,1,1,2-Tetrachloroethene	<0.5	Styrene	<0.5	1,2,3-Triethylbenzene	<0.5
Bromoformane	<0.5	Chloroform	<0.5	1,1,2,2-Tetrachloroethene	<0.5	1,1,1,2-Tetrachloroethane	<0.5	Vinyl Acetate	<1
Bromoformane	<0.5	Chloroform	<0.5	1,2-Dichloropropane	<0.5	1,1,2,2-Tetrachloroethene	<0.5	Vinyl Chloride	<0.5
Bromodichloromethane	<0.5	Chloroform	<0.5	1,2-Dichloropropane	<0.5	Tetrahydrofuran	<0.5	Methyl-Tert-Butyl-Ether	<0.15
Bromonane	<0.5	Chloroform	<0.5	1,1-Dichloroethene	<0.5	Toluene	<0.5	4-Hexyl-2-pentene	<1
α-Bromofluoromethane	<1	Chloroform	<0.5	1,1-Dichloroethene	<0.5	1,2,3-Trichloroethene	<0.5	α-Phenyl-tert-butylether	<0.15
β-Bromofluoromethane	<0.5	Chloroform	<0.5	1,1,2,3-Tetrachloroethene	<0.5	1,2,4-Trichlorobutene	<0.5	tert-aminylmethylether	<0.15
α,β-Dibromoethane	<0.5	Chloroform	<0.5	1,1,2,3-Tetrachloroethene	<0.5	1,1,1-Trichloroethane	<0.5	diacetyl-phether	<0.15
α,β-Dibromoethane	<0.5	Chloroform	<0.5	1,1,2,3-Tetrachloroethene	<0.5	1,1,2-Trichloroethane	<0.5	tert-butanol	<0.15
α,β-Dibromoethane	<0.5	Chloroform	<0.5	1,1,2,3-Tetrachloroethene	<0.5	1,1,1-Trichloroethane	<0.5	α-vylene	<0.5
Carbon Tetrachloride	<0.5	Chloroform	<0.5	1,1,2,3-Tetrachloroethene	<0.5	1,1,1-Trichloroethane	<0.5	m-xylene	<0.5
Carbon Disulfide	<0.5	Chloroform	<0.5	1,1,2,3-Tetrachloroethene	<0.5	1,1,1-Trichloroethane	<0.5	p-xylene	<0.5

METALS, CYANIDE & SULFIDE COMPOUNDS (PROCEDURE 3)									
Analyte	Detection Limit (ug/l)	Beryllium	<0.01	Iron	<3	Nickel	<0.05	Vanadium	<1
Cadmium	<0.03	Cadmium	<0.03	Lead	<0.05	Potassium	<0.50	Zinc	<0.3
Aluminum	<0.5	Cadmium	<0.50	Magnesium	<4	Selenium	<0.5	Cyanide	<3
Antimony	<0.03	Cadmium	<0.04	Manganese	<0.1	Silver	<0.02	Fluoride	<100
Ammonium	<0.01	Cobalt	<0.25	Mercury	<0.2	Sodium	<6	Nitrate + Nitrite	<50
Boron	<0.03	Copper	<0.08	Molybdenum	<0.5	Thallium	<0.09		

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EXTRACTABLE ORGANIC COMPOUNDS (PROCEDURE 1)

Analyte	Quantitation Limit (ug/l)	Alpha-Chloroane	<0.05	4-Methylphenol	<1	2-Nitroaniline	<1	Anthracene	<0.1
PESTICIDES/PCB'S									
Alpha BHC	<0.005	Gammex-Chloroane	<0.05	N,N-Diisopropyl-n-propylamine	<1	Dinitrophenols	<1	Di-n-butylphthalate	<0.2
Beta BHC	<0.005	Tetraphenyl	<0.05	Hexachlorophene	<1	Acetophenone	<0.2	Fluorofurane	<0.1
Delta BHC	<0.005	Arsenic-1016	<0.2	Nitrobenzene	<1	2,6-Dinitrophenol	<1	Pyrene	<0.15
Gamma BHC (Undene)	<0.005	Arsenic-1221	<0.2	Isophorone	<1	3-Nitroaniline	<1	Butylbenzylphthalate	<1
Heptachlor	<0.005	Arsenic-1232	<0.2	2,4-Naphthol	<1	Acenaphthene	<0.2	1,2-Dihydroanthracene	<1
Aldrin	<0.005	Arsenic-1242	<0.2	2,4-Dimethylphenol	<1	2,4-Dimethoxyphenol	<5	1,2'-Dihydrofuran	<1
Heptachlor Epenide	<0.005	Arsenic-1248	<0.2	Is-(2-Chlorophenyl) methane	<1	4-Nitrophenol	<5	1,4'-Dihydrofuran	<1
Ecdosulfan I	<0.005	Arsenic-1254	<0.2	2,4-Dichlorophenol	<1	Dibenzofuran	<1	2,2'-Dihydrodiphenyl	<1
Ecdosulfan II	<0.005	Arsenic-1260	<0.2	1,2,4-Trichlorobenzene	<1	2,4-Dimethylaniline	<1	Benzylbenzoate	<0.15
Endosulfan I	<0.005	Arsenic-1262	<0.2	Naphthalene	<0.2	Dicyclophthalate	<1	Chrysene	<0.1
Endosulfan	<0.005	Arsenic-1268	<0.2	4-Chloronitroline	<1	4-Chlorophenyl-Phenylether	<1	Is-(2-Ethoxy) Phenol	<1
Ecdrin	<0.005	SEMI VOLATILES							
Ecdosulfan II	<0.005	Phenol	<1	4-Chloro-2-Methylphenol	<1	Furane	<0.15	Di-n-Octylphthalate	<1
4,4'-DDD	<0.005	Is-(2-Chlorophenyl) ether	<1	2-Methylphenol	<0.2	4-Nitroaniline	<1.5	Benzyl-β-furanethane	<0.2
Ecdosulfan Sulfate	<0.005	Is-(2-Chlorophenyl) ether	<1	Hexachlorocyclopentene	<1	4-Nitro-2-Methylphenol	<1	Benzyl-β-glycidyl	<0.15
4,4'-DDT	<0.005	2-Chlorophenol	<1	2,4,6-Trichlorophenol	<1	N-Nitrosophenylamine	<1	Inden-1,2-diyne	<0.2
Methychlor	<0.005	2-Methylphenol	<1	2,4,5-Trichlorophenol	<1	4-Nitrosophenyl-Phenylether	<1	Dibenzyl-β-hydroxyacetone	<0.15
Endrin Ketone	<0.005	2,2'-Oxybis	<1	1,2-Diphenylhydrazine	<1	Hexachlorobenzene	<1	Isopropyl-β-phenylene	<0.15
Endrin Aldehyde	<0.005	[(1-Oxopropane)]	<1	Cyanoacrolein	<1	Penta-Monophenol	<1	Benzic Acid	<5
				2-Chloroaliphatic acids	<0.15	Phenanthrene	<0.2	Benzyl Alcohol	<1

PURGEABLE VOLATILE ORGANIC COMPOUNDS (PROCEDURE 2)

Analyte	Quantitation Limit (ug/l)	Chlorobenzene	<0.1	1,1-Dichloroethene	<0.1	4-Hydroxytoluene	<0.1	Trichloroethanes	<0.1
ACROLES									
Benzene	<0.1	Chlorotoluene	<0.1	1,2-Dichloroethene	<0.1	Methylene Chloride	<0.5	1,2,3-Trichloropropane	<0.1
Bromoform	<0.1	4-Chlorotoluene	<0.1	1,3-Dichloroethene	<0.1	Naphthalene	<0.5	1,2,3-Triethylbenzene	<0.1
Bromodivinylene	<0.1	2-Chlorotoluene	<0.1	1,2-Dichloroethane	<0.1	Propylbenzene	<0.1	1,2,4-Triethylbenzene	<0.1
Bromochloromethane	<0.1	Chloroform	<0.1	1,2-Dichloropropane	<0.1	Syrene	<0.1	1,2,5-Triethylbenzene	<0.1
Bromonitromethane	<0.1	Dibromochloromethane	<0.1	1,3-Dichloropropane	<0.1	1,1,1,2-Tetrachloroethane	<0.1	Vinyl Acetate	<0.5
2-Butyno-1-ene	<0.1	1,2-Dibromoethane	<0.1	1,2-Dichloroethane	<0.1	1,1,2,2-Tetrachloroethane	<0.1	Vinyl Chloride	<0.1
n-Butyno-1-ene	<0.1	1,2-Dibromoethene	<0.1	1,2-Dichloroethene	<0.1	Tetrachloroethane	<0.1	Methyl-Ter-Butyl-Ether	<0.5
2-Butyno-1-ene	<0.1	1,2-Dibromopropane	<0.1	1,1-Dichloroethene	<0.1	1,2,3-Tribromoethane	<0.1	4-Methyl-2-pentanone	<0.5
n-Butyno-1-ene	<0.1	1,2-Dibromopropane	<0.1	1,1-Dichloropropane	<0.1	1,2,4-Tribromoethane	<0.1	ethyl-Ter-Butyl-Ether	<0.1
sec-Butyno-1-ene	<0.1	1,2-Dibromobenzene	<0.1	1,1,1,2-Tetrachloroethane	<0.1	tert-Butylmethyl-Ether	<0.1	tert-Butylmethyl-Ether	<0.1
tert-Butyno-1-ene	<0.1	1,2-Diketonebenzene	<0.1	1,1,2-Tetrachloroethane	<0.1	diisopropylether	<0.1	tert-Butanol	<0.1
Carbon Tetrachloride	<0.1	1,4-Diketonebenzene	<0.1	1,1,1-Tetrachloroethane	<0.1	Terphenyl	<0.1	Isopropylidene	<0.1
Carbon Disulfide	<0.1	Dibromoalkylbenzenes	<0.1	1,1,1,2-Tetrachloroethane	<0.1	Trichloroethanes	<0.1	Isopropylidene	<0.2

METALS, CYANIDE & SULFIDE COMPOUNDS (PROCEDURE 3)

Analyte	Detection Limit (ug/l)	Barium	<0.01	Boron	<0.01	Iron	<0.1	Nickel	<0.05
Aluminum	<0.5	Cadmium	<0.01	Lanthan	<0.05	Potassium	<0.5	Zinc	<0.3
Antimony	<0.03	Chromium	<0.01	Magnesium	<0.1	Selenium	<0.5	Cyanide	<5
Arsenic	<0.01	Cobalt	<0.25	Manganese	<0.1	Silver	<0.02	Ruthenide	<100
Boron	<0.03	Copper	<0.08	Mercury	<0.2	Sodium	<0.1	Nitrate + Nitrite	<0.0

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EXTRACTABLE ORGANIC COMPOUNDS (PROCEDURE 1)

Analyte	Detection Limit (ug/l)	Alpha-Chloroane	<0.005	6-Methylphenol	<1	2-Nitroaniline	<1	Anthracene	<0.1
Gamma-Chloroane	<0.005	Tetraphenyl	<1	N-Nitroso-dimethylamine	<1	Dimethylphthalate	<1	D- α -Butyl-phthalate	<0.2
Tetraphenyl	<0.005			Hexachloroethane	<1	Aromaphthene	<0.2	Fluoranthene	<0.1
Alpha-BHC	<0.005	Anodor-1016	<0.2	Nitrobenzene	<1	2,6-Dinitroanisole	<1	Pyrene	<0.15
Beta-BHC	<0.005	Anodor-1221	<0.2	Isophorone	<1	3-Nitroanisole	<1	Butylbenzyl-phthalate	<1
Delta-BHC	<0.005	Anodor-1222	<0.2	2-Nitrophenol	<1	Acenaphthene	<0.2	1,2-Dichlorobenzene	<1
Gamma-BHC (isodorene)	<0.005	Anodor-1242	<0.2	2,4-Dimethylphenol	<1	2,4-Dimethylphenol	<1	1,2-Dichlorobenzene	<1
HepaKlear	<0.005	Anodor-1248	<0.2	Is(2-Chlorophenyl) ethylene	<1	4-Nitrophenol	<1	1,4-Dichlorobenzene	<1
Aldrin	<0.005	Anodor-1254	<0.2	2,4-Oxydiphenol	<1	Dibenzofuran	<1	3,3'-Dichlorobenzidine	<1
Heptachlor Epoxide	<0.005	Anodor-1260	<0.2	1,2,4-Trichlorobenzenes	<1	2,4-Dinitroanisole	<1	Benzofluorophene	<0.15
Endosulfan I	<0.005	Anodor-1262	<0.2	Naphthalene	<0.2	Dicyanophthalate	<1	Olynone	<0.1
Endosulfan II	<0.005	Anodor-1268	<0.2	4-Chloronaphthalene	<1	Is(2-Ethylhexyl) Phthalate	<1	Di-n-Octyl-phthalate	<1
4,4'-DDE	<0.005			Hexachlorobutadiene	<1	Roumene	<0.15	Benzylbifluorophene	<0.2
Endrin	<0.005			4-Chloro-3-Methylphenol	<1	4-Nitroaniline	<1.5	Benzylbifluorophene	<0.2
Endosulfan II	<0.005	Pivalal	<1	2-Methylphenol	<0.2	4,6-Diisopropylphenol	<1	Benzylbifluorophene	<0.15
4,4'-DDD	<0.005			Hexachlorocyclopentadiene	<1	Nitroanisole	<1	Benzylbifluorophene	<0.15
Endosulfan Sulfate	<0.005			Is(2-Chlorophenyl) ether	<1	N-Nitrosodimethylamine	<1	Isododecyl-2,3-diphenyl	<0.2
4,4'-DDT	<0.005			2-Chlorophenol	<1	2,4,5-Trichlorophenol	<1	Dibenzofluorophene	<0.15
Methoxychlor	<0.005			2-Methylphenol	<1	Isopropenylphenol	<1	Benziglycylperylene	<0.15
Eddrin Ketone	<0.005			Corbazole	<1	Heptadecabenzocoronene	<1	Benziglycylperylene	<0.15
Eddrin Aldehyde	<0.005			2-Chlorophenol	<1	Pentaclorophenol	<1	Benziglycylperylene	<0.15
			<1			Phenanthrene	<0.2	Benzyl Alcohol	<1

PURGEABLE VOLATILE ORGANIC COMPOUNDS (PROCEDURE 2)

Analyte	Detection Limit (ug/l)	Chlorobutane	<0.1	1,1-Dichloroethane	<0.1	4-Hexynol	<0.1	Trichlorotoluene	<0.1
Acetone	<2.0	Chloroform	<0.1	1,2-Dichloroethane	<0.1	Methylene Chloride	<0.5	1,2,3-Trichloropropane	<0.1
Benzene	<0.1	2-Chlorotoluene	<0.1	1,1-Dichloroethene	<0.1	Naphthalene	<0.5	1,2,3-Triethylbenzene	<0.1
Bromoform	<0.1	4-Chlorotoluene	<0.1	1,1,2-Trichloroethane	<0.1	Propylbenzene	<0.1	1,2,4-Triethylbenzene	<0.1
Bromodifluoromethane	<0.1	2,4-Dichlorotoluene	<0.2	1,2-Dichloropropane	<0.1	Styrene	<0.1	1,3,5-Triethylbenzene	<0.1
Bromochlorofluoromethane	<0.1	Chloroform	<0.1	1,3-Dichloropropane	<0.1	1,1,2,2-Tetrachloroethane	<0.1	Vinyl Acetate	<0.5
Bromoform	<0.1	Dibromochloromethane	<0.1	2,2-Dichloropropane	<0.1	1,1,2,3-Tetrachloroethane	<0.1	Vinyl Chloride	<0.1
Bromoform	<0.1	1,2-Dibromo-3-Chloropropane	<0.1	1,1-Dichloropropane	<0.1	Tetrachloroethene	<0.1	Methyl-Tert-butyl-Ether	<0.1
α -Butylbenzene	<0.1	Dibromodimethylbenzene	<0.1	1,1,3-Dichloropropane	<0.1	Toluene	<0.1	α -Methyl-2-pentanone	<0.5
α -Butylbenzene	<0.1	1,2-Dibromoethane	<0.1	1,1,1-Trichloroethane	<0.1	1,2,3-Trichlorobenzene	<0.1	ethyl-tert-butyl-ether	<0.1
α -Butylbenzene	<0.1	1,2-Dichlorobenzene	<0.1	1,1,1,2-Tetrachloroethane	<0.1	1,2,4-Trichlorobenzene	<0.1	tert-anisylbutyl-ether	<0.1
α -Butylbenzene	<0.1	1,3-Dichlorobenzene	<0.1	Ethylbenzene	<0.1	1,1,1-Trichloroethane	<0.1	diisopropyl-ether	<0.1
α -Butylbenzene	<0.1	1,4-Dichlorobenzene	<0.1	1,4-Ethanediol	<0.5	1,1,2-Vicinalethane	<0.1	tert-butanol	<0.1
Carbon Tetrachloride	<0.1	Dichlorodifluoromethane	<0.1	Hexachlorobutadiene	<0.1	Trichloroethene	<0.1	cyclohexene	<0.1
Carbon Disulfide	<0.1			Isopropylbenzene	<0.1	Trichlorofluoromethane	<0.1	isoprene()	<0.2
								propylene()	<0.2

METALS, CYANIDE & SULFIDE COMPOUNDS (PROCEDURE 3)

Analyte	Detection Limit (ug/l)	Beryllium	<0.01	Iron	<3	Nickel	<0.05	Vanadium	<1
Aluminum	<0.5	Cadmium	<0.03	Lead	<0.05	Potassium	<0.5	Zinc	<0.3
Antimony	<0.03	Calcium	<50	Magnesium	<4	Selenium	<0.5	Cyanide	<5
Arsenic	<0.01	Chromium	<0.06	Manganese	<0.1	Silver	<0.02	Fluoride	<100
Boron	<0.03	Cobalt	<0.25	Mercury	<0.2	Sodium	<6	Nitrate + Nitrite	<50
		Copper	<0.08	Molybdenum	<0.3	Thallium	<0.09		

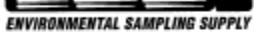
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Approved: *Theresa Wobach* P-40
108
APFT

Bottle Type & QA Level: J Level 1

Description: 1 Liter Clear Wide Mouth

Eagle-Picher Level 1 products have been tested and found to comply with or to be lower than the EPA detection limits as stated in CCR Part 300, § 300.9-05A. "Specifications And Guidance For Contaminant-Free Sample Containers 12/92". Eagle-Picher pass/fail criteria considers all significant non-target compounds.

ORGANIC ANALYTICS	(pg/L)
Phenol	< 5
bis-(2-Chloroethyl)ether	< 5
2-Chlorophenol	< 5
2-Methoxyphenol	< 5
2,2'-oxybis(1-Chloropropane)	< 5
4-Methyphenol	< 5
N-Nitroso-di-n-propylamine	< 5
Mesochloroethane	< 5
1,4-Dichlorobenzene	< 5
Isophorone	< 5
2-Nitrophenol	< 5
2,6-Dimethylphenol	< 5
bis-(2-Chloroethoxy)methane	< 5
2,6-Dichlorophenol	< 5
1,2,4-Trichlorobenzene	< 5
Naphthalene	< 5
4-Chloronaniline	< 5
Mesochlorobutadiene	< 5
4-Chloro-3-methyphenol	< 5
2-Methylisobutylbenzene	< 5
Mesochlorocyclopentadiene	< 5
2,4,4-Trichlorophenol	< 5
2,4,5-Trichlorophenol	< 20
2-Chloronaphthalene	< 5
2-Nitroaniline	< 20
Dimethylphthalate	< 5
Anisaphthalene	< 5
2,6-Dinitrotoluene	< 5
3-Nitroaniline	< 20
Anisophthalone	< 5
Benzyl alcohol*	< 5
1,2-Dichlorobenzene*	< 5
Benzic Acid*	< 5
N-Nitrosodimethylamine*	< 5

ORGANIC ANALYTICS	(pg/L)
3,4-Dinitrophenol	< 20
4-Methanol	< 20
Chlorofuran	< 5
2,4-Dinitrotoluene	< 5
Diethylphthalate	< 5
4-Chlorophenyl-phenylether	< 5
Fluorene	< 5
4-Hydroaniline	< 20
4,6-Dinitro-2-methyphenol	< 20
N-Nitrosodiphenylamine	< 5
4-Ethoxylphenyl-phenylether	< 5
Mesochlorobenzene	< 5
Pentachlorophenol	< 20
Phenanthrene	< 5
Anthracene	< 5
Di-n-butylphthalate	< 5
Fluorenone	< 5
Pyrene	< 5
Butylbenzylphthalate	< 5
3,3'-Dichlorobenzidine	< 5
Benz[a]anthracene	< 5
Chrysene	< 5
bis-(2-Ethylhexyl)phthalate	< 5
Di-n-octylphthalate	< 5
Benz[b]fluoranthene	< 5
Benz[k]fluoranthene	< 5
Benz[a]pyrene	< 5
Indeno[1,2,3- <i>cd</i>]pyrene	< 5
Dibenz[a,h]anthracene	< 5
Benz[g,h,i]perylene	< 5
1,3-Dichlorobenzene*	< 5
Carbazole*	< 5
1,4-Dichlorobenzene*	< 5
Arobenzenes*	< 5

INORGANIC ANALYTICS	(pg/L)
Ag (Silver)	< 5
Al (Aluminum)	< 50
As (Arsenic)	< 1
Ba (Barium)	< 10
Be (Beryllium)	< 0.5
Ca (Calcium)	< 500
Cd (Cadmium)	< 1
Cr (Cyanide)	< 10
Co (Cobalt)	< 5
Cr (Chromate)	< 5
Cu (Copper)	< 5
F (Fluoride)	< 250
Fe (Iron)	< 50
Hg (Mercury)	< 0.2
K (Potassium)	< 150
Mg (Magnesium)	< 50
Mn (Manganese)	< 5
Na (Sodium)	< 5000
Ni (Nickel)	< 15
Pb (Lead)	< 1
Sn (Antimony)	< 2
Sr (Selenite)	< 2
Tl (Thallium)	< 5
V (Vanadine)	< 5
Zn (Zinc)	< 10

PESTICIDE ANALYTICS	(pg/L)
alpha-HBC	< 0.01
beta-HBC	< 0.01
delta-HBC	< 0.01
gamma-HBC (Lindane)	< 0.01
Heptachlor	< 0.01
Aldrin	< 0.01
Heptachlor epoxide	< 0.01
Endosulfan I	< 0.01
Endosulfan II	< 0.02
4,4'-DDB	< 0.02
Endrin	< 0.02
Endosulfan II	< 0.02
4,4'-DDD	< 0.02
Endosulfan sulfate	< 0.02
4,4'-DDT	< 0.02
Methoxychlor	< 0.10
Endrin ketone	< 0.02
Endrin aldehyde	< 0.02
alpha-Chlordane	< 0.01
gamma-Chlordane	< 0.01
Toxaphene	< 1.0
Aroclor-1016, Aroclor-1232	< 0.20
Aroclor-1242, Aroclor-1248	< 0.20
Aroclor-1254, Aroclor-1260	< 0.20
Aroclor-1262	< 0.40
Aroclor-1260*, Aroclor-1261*	< 0.20

*Analyte not listed as a target compound in the CCR Directive.

Eagle-Picher Technologies Division 209 S. J. Tunnel Blvd. Miami, OK 74354 Fax (918) 540-1639

Certificate of Analysis

Sample Container Lot #E1199044 meets or exceeds all QA/QC criteria established in "Specifications and Guidance for Obtaining Contaminant-Free Sample Containers".

The full Documentation Package is available from Eagle-Picher Environmental Services.

Verified by: Jul. Shepherd
Date : 8-6-91

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